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STMicroelectronics Inc. c/o WOLF, GREENFIELD & SACKS, P.C. 600 Atlantic Avenue BOSTON, MA 02210-2206				
EXAMINER VERDL KIMBLEANN C				
ART UNIT 2194		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

**Application No.**

10/561,082

**Applicant(s)**

JACOPS ET AL.

**Examiner**

KimbleAnn Verdi

**Art Unit**

2194

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 September 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 and 9-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/10/2010, 2/1/2010, and 12/16/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 1-7 and 9-24 are pending in the current application.
2. **Claims 1-7, 9, and 13** are directed to computer readable storage medium encoded with software routines. In view of Applicant's disclosure, specification page 4, lines 26-28, the Examiner interprets the limitations of the computer readable storage medium to include only non-transitory tangible storage medium embodiments. Therefore claims 1-7, 9, and 13 are directed to statutory subject matter.

***Continued Examination Under 37 CFR 1.114***

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 9, 2010 has been entered.

***Specification***

4. The substitute specification filed 12/16/2005 complies with 37 CFR 1.125 and has been entered.

***Claim Objections***

5. Claim 1-7, 9, and 13 are objected to because of the following informalities:
- a. Claim 1, line 5, the recitation of "software routines, when executed, providing", should be -- software routines, when executed by the processor, providing --. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claims 1-7, 9, 13-17, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

8. **Claim 1** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite because the metes and bounds of the claim cannot clearly be ascertained. It is unclear whether the interface, SW protocol layers, embedded software application, and the processor are part of the software routines. Applicant appears to be claiming the function of the elements as part of the software routines but not the elements themselves.

9. **Claims 2-7, 9 and 13** did not cure the deficiencies of claim 1.

10. **Claim 14** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite because the metes and bounds of the claim are not clear. Elements of the claimed API are not provided, only functions of the API are described. Applicant claims an API that provides functions and communicating towards an underlying operating system; however no elements of the API are claimed.

11. **Claims 15-16** did not cure the deficiencies of claim 14.

12. **Claim 17** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite because the metes and bounds of the claim cannot clearly be ascertained. It is unclear whether the layers of the telecommunications protocol communicating towards the underlying OS is part of the claimed method of embedding a software application, since the limitation of "generating an API for communicating towards at least one of an underlying OS, layers of a telecommunications protocol, and any hardware" implies the layers of the telecommunications protocol is not required for the claimed method.

13. **Claim 22** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite because the metes and bounds of the claim cannot clearly be ascertained. It is not clear whether software (SW) protocol layers is part of the claimed method of embedding a software application, since the limitation of "a software application requiring software (SW) protocol layers, profiles, and/or application code embedded on

a processor" implies the software (SW) protocol layers is not required for the claimed method.

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 1-7 and 9-24 are rejected under 35 U.S.C. 102(b) as being unpatentable over Motorola ("JAVA™ APIs for BLUETOOTH™ Wireless Technology (JSR-82)", previously cited) in view of Atkinson et al. (hereinafter Atkinson, previously cited) (U.S. Publication No. 2002/0012329 A1), in view of Comeau et al. (hereinafter Comeau) (U.S. Publication No. 2002/0099863 A1).

16. As to claim 1, Motorola teaches the invention substantially as claimed including a computer readable storage medium encoded with software routines (*javax.bluetooth package, page 11, section 3.3.1, lines 1-10*) for use by an embedded software application (*game application, pages 5 and 6, section 2.2.4, lines 1-15*) requiring software (SW) protocol layers (*page 6, section 2.3, lines 7-11*), profiles (*pages 6 and 7, section 2.3, lines 12-16*) or application code (*BLUETOOTH™ Control Center, page 5, section 2.2.3, lines 16-19*) embedded on a

processor (**page 5, section 2.2.2, lines 1-8**), the software routines when executed, providing an interface (**JSR-82**) between the embedded software application running on the processor (**game application, pages 5 and 6, section 2.2.4, lines 1-15**) and the SW protocol layers (**BLUETOOTH™ Protocols**) and/or the profiles (**BLUETOOTH™ profiles**) or the application code (**page 1, Section 1.2.1, lines 9-11**).

17. Motorola does not explicitly disclose wherein the interface and the SW protocol layers communicate towards an underlying operating system (OS) through an abstraction layer that maps OS-independent function calls to OS-specific function calls and wherein the interface assigns priorities to tasks of the embedded software application such that the tasks of the embedded software application are interrupted by OS tasks.

18. However Atkinson teaches wherein the interface (**API 116, Figure 4**) and the SW protocol layers (**protocol stack 122, Figure 3**) communicate towards an underlying operating system (OS) (**operating system environment 113, Figure 2**) through an abstraction layer (**software layer 101, Figure 3**) that maps (**abstracts connectivity**) OS-independent function calls to OS-specific function calls (**"abstract the nature of the connectivity between a particular operating system the processor 103 operates under", paragraph 0050, lines 45-50**).

19. Motorola as modified by Atkinson does not explicitly disclose wherein the interface assigns priorities to tasks of the embedded software application such that the tasks of the embedded software application are interrupted by OS tasks.

20. However Comeau teaches wherein the interface (*i.e. "software support layer, 202", Figure 3*) assigns priorities to tasks (*i.e. "threads"*) of the embedded software application (*i.e. "In one embodiment, interrupt manager 306 adjusts for different interrupt priorities via software mapped interrupts to threads. Such an implementation allows the mapping of any type of interrupt system to a standard model compatible with the processor 102. Moreover, the interrupts can be from a single source, or vectored, or totally software simulated. The defined interrupts are then mapped to software interrupts and given their own priorities all within the boundaries of the support layer 202", paragraph 0047, lines 1-11*) such that the tasks of the embedded software application are interrupted by OS tasks (*i.e. "In some embodiments, interrupt manager 306 includes a scheduler that schedules virtual machine threads based on their association with a given interrupt source. In such embodiments, interrupt service routines may be tied to threads under the control of the scheduler", paragraph 0049, lines 1-5, "Examples of operating systems within the scope of the embodiments present invention that support Java or Java-like languages contemplated for use with host and/or a target devices, include, but are not limited to: WIN32, Unix, Macintosh OS, Linux, DOS, PalmOS, and Real Time Operating Systems (RTOS)*

***available from manufacturers such as Acorn, Chorus, GeoWorks, Lucent Technologies, Microwave, QNX, and WindRiver Systems, which may be utilized on a host and/or a target device", paragraph 0042, lines 9-17, --OS tasks normally run at a higher priority than other tasks in a multi-tasking, pre-emptive RTOS like from Wind River Systems).***

21. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified API of Motorola with the teachings of software support layer from Atkinson and Comeau because these features would have provided a mechanism to abstract out a particular processor architecture, and if an operating system is also used, the nature of the connectivity between a particular operating system the processor operates under (***paragraph [0050], lines 45-50 of Atkinson***) and a mechanism to support processors executing interpreted language applications without the need to take into account the integration problems associated with use of a real time operating system, that minimizes or eliminates the operating system and/or processor platform dependency, and yet provides a low-power, small-memory footprint alternative (***paragraph 0014, lines 1-7 of Comeau***).

22. **As to claim 2**, Motorola teaches wherein the interface (JSR-82) is between the embedded software application running on the processor (***game application, pages 5 and 6, section 2.2.4, lines 1-15***) and a telecommunications module (***BIUETOOTH™ protocol, page 6, section 2.2.4, lines 7-10***).

23. **As to claim 3**, Motorola teaches wherein the telecommunications module is a lower layer SW protocol (*BLUETOOTH™ protocol, page 6, section 2.2.4, lines 7-10*).

24. **As to claim 4**, Motorola teaches wherein the interface uses telecommunications controller interface communications (*HCI, Figure 3-1*).

25. **As to claim 5**, Motorola teaches wherein the communications are HCI communications (*HCI, Figure 3-1*) for communication with the telecommunications module (*L2CAP, Figure 3-1*).

26. **As to claim 6**, Motorola teaches wherein the interface allows the embedded software application (*game application, pages 5 and 6, section 2.2.4, lines 1-15*) communicates (*using BLUETOOTH™ communications, page 6, section 2.2.4, lines 7-10*) with a telecommunications module (*L2CAP, page 6, section 2.3, lines 5-8*) for executing a telecommunications protocol (*establish L2CAP connection, page 7, section 2.3, lines 21-24*).

27. **As to claim 7**, Motorola teaches wherein the interface allows the embedded software application (*game application, pages 5 and 6, section 2.2.4, lines 1-15*) communicates with a hardware input/output interface (*phone or PDA, section 2.2.4, page 6, lines 11-15*).

28. **As to claim 9**, Motorola teaches wherein the medium is a CD-ROM or DVD-ROM or a memory or data storage device (*memory, section 2.2.2, page 5, lines 4-5*).

29. **As to claim 10**, this claim is rejected for the same reasons as claim 1 above. In addition Motorola teaches a telecommunications device (*BLUETOOTH™ device, page 5, section 2.2.2, lines 1-12, MIDP device, section 3.3.2, page 11, line 1*) an interface executing on the telecommunications device (*BLUETOOTH™ API, section 3.3.2, page 12, Figure 3-5*) towards an underlying operating system (OS) (*page 12, section 3.3.2, Figure 3-5*), layers of a telecommunications protocol (*BLUETOOTH™ Stack, section 3.3.2, page 12, Figure 3-5*) and optionally towards any hardware available for an embedded application (*Bluetooth Radio Hardware, section 3.2, page 9, Figure 3-1*).

30. **As to claim 11**, this claim is rejected for the same reasons as claim 1 since claim 11 recites the same or equivalent invention, see the rejection to claim 1 above.

31. **As to claim 12**, Motorola teaches wherein the interface is an API (*JSR-82, page 4, section 2.1, lines 1-8*).

32. **As to claim 13**, this claim is rejected for the same reasons as claim 1 since claim 13 recites the same or equivalent invention, see the rejection to claim 1 above.

In addition Motorola teaches a Host processing system (*Kiosk or Vending machine, page 6, section 2.2.4, lines 16-36*).

33. **As to claim 14**, this claim is rejected for the same reasons as claims 1 and 10 since claim 14 recites the same or equivalent invention, see the rejection to claims 1 and 10 above.

34. **As to claim 15**, this claim is rejected for the same reasons as claim 5 since claim 15 recites the same or equivalent invention, see the rejection to claim 5 above.

35. **As to claim 16**, this claim is rejected for the same reasons as claim 1 since claim 16 recites the same or equivalent invention, see the rejection to claim 1 above.

36. **As to claim 17**, this claim is rejected for the same reasons as claim 14 since claim 17 recites the same or equivalent invention, see the rejection to claim 14 above.

37. **As to claim 18**, this claim is rejected for the same reasons as claim 10 since claim 18 recites the same or equivalent invention, see the rejection to claim 10 above.

38. **As to claim 19**, this claim is rejected for the same reasons as claim 12 since claim 19 recites the same or equivalent invention, see the rejection to claim 12 above.

39. **As to claim 20**, this claim is rejected for the same reasons as claim 10 since claim 20 recites the same or equivalent invention, see the rejection to claim 10 above.

40. **As to claim 21**, this claim is rejected for the same reasons as claim 12 since claim 21 recites the same or equivalent invention, see the rejection to claim 12 above.

41. **As to claims 22-24**, these claims are rejected for the same reasons as claims 17-19 since claims 22-24 recite the same or equivalent invention, see the rejections to claims 17-19 above.

#### ***Response to Arguments***

42. Applicant's arguments filed on May 12, 2010, with respect to the 35 U.S.C. 112 rejections of **1-7, 9, 13-17, and 22** have been fully considered but they are not persuasive. In response to the Final Office Action dated May 15, 2007, applicant argues in regards to claims **1-7, 9, 13-17, and 22**:

(1) Applicants believe that the metes and bounds of the claim as amended can be clearly ascertained. Accordingly, it is respectfully requested that the rejection of claims 1-7, 9, 13-17, and 22 under 35 U.S.C. §112, second paragraph be withdrawn (**page 9, lines 27-28, page 10, lines 1-2, 7-9, and 17-19**).

In response to argument (1), examiner respectfully disagrees and notes that the metes and bounds of the claims 1-7, 9, 13-17, and 22 cannot clearly be ascertained. For example, with regards to **claim 1**, It is unclear whether the interface, SW protocol layers, embedded software application, and the processor are part of the software routines. Applicant appears to be claiming the function of the elements as part of the software routines but not the elements themselves.

With regards to **claim 14**, elements of the claimed API are not provided, only functions of the API are described. Applicant claims an API that provides functions and communicating towards an underlying operating system; however no elements of the API are claimed.

With regards to **claim 17**, it is unclear whether the layers of the telecommunications protocol communicating towards the underlying OS is part of the claimed method of embedding a software application, since the limitation of "generating an API for communicating towards at least one of an underlying OS, layers of a telecommunications protocol, and any hardware" implies the layers of the telecommunications protocol is not required for the claimed method.

And with regards to **claim 22**, it is uncertain whether software (SW) protocol layers is part of the claimed method of embedding a software application, since the limitation of "a software application requiring software (SW) protocol layers, profiles, and/or application code embedded on a processor" implies the software (SW) protocol layers is not required for the claimed method.

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43. Applicant's arguments with respect to the U.S.C. 103 rejection of claims 1-7 and 9-24 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

44. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KimbleAnn Verdi whose telephone number is (571)270-1654. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm EST..

45. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sough can be reached on 571-272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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46. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. S. SOUGH/  
Supervisory Patent Examiner, Art Unit 2194  
12/06/10

KV  
December 3, 2010